## 16INI0224

## **CLAIMS:**

A multi-tier application architecture having a middletier comprising:

 a framework to mediate between an application and a middletier,
 wherein the framework allows a middletier to execute an object fetched by an application from a cache;

wherein, when an object becomes stale, the framework repeatedly refreshes the object within a limited number of retries;

wherein, when an object refresh succeeds, the framework returns the object to the cache and again allows the middletier to execute the object; and

wherein, when an object refresh does not succeed within a limited number of retries, the framework quits an application in fail-safe way.

- 2. The multi-tier application architecture according to claim 1, wherein a user can specify the limited number of retries.
- 3. The multi-tier application architecture according to claim 2, wherein a user can specify a time interval between the retries.
- 4. The multi-tier application architecture according to claim 1, wherein the framework has its operations visualized to a user.
- 5. The multi-tier application architecture according to claim 1, further including:

  a watchdog to resume normal operations when the middletier crushes.
- 6. The multi-tier application architecture according to claim 5, wherein the watchdog recovers a middletier based on a result of periodical polling.

## 16INI0224

7. The multi-tier application architecture according to claim 5, wherein the watchdog recovers a middletier based on notification from the framework.